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What Factors Influence the Way We See Ourselves?

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ABSTRACT

In this paper, we sought to understand what factors influence our self-perception, so that we could learn to better understand our own thinking, and how to better support others. Previous research has predicted self-perception by variables such as masculinity, quiescent silence, and time spent on social media. In our first (correlational) study, we tested the strength of these relationships by examining naturalistic daily changes in their variables longitudinally over a one-week period. We measured masculinity by rating on a 5-point scale, quiescent silence by recording number of individual instances, time spent on social media by recording number of minutes per day, perceived self-efficacy by rating on a 7-point scale, positive self-perception of creativity by rating on a 5-point scale and negative self-perception on a 5-point scale. Based on the strength of correlation found between quiescent silence and perceived self-efficacy in our correlational study, we then conducted a second (experimental) study to test for a causal relationship between these two variables. Over a one-week period, we assigned participants on alternating days to either a quiescent silence condition or a natural voice condition and measured the effect this manipulation had upon perceived self-efficacy using both self-rated and other-rated methods. While data pooled across participants in our correlational study showed no correlation of any statistical significance between the variables, data pooled across participants in our experimental study showed a significant effect of quiescent silence upon perceived self-efficacy. Our data suggests an ongoing relationship between quiescent silence and self-perception, one practical application of which may be methods of raising perceived self-efficacy through speech and personal engagement.

1. Introduction

1.1 Research Problem

Our goal is to delve into uncovering what factors influence our self-perception. As one of the authors of this paper is a counselor (A.M.), we were interested in studying what affects our self-image and what ways we have to influence those perceptions. We wanted to be able to better support others in developing clearer and more accurate perceptions of themselves, and overcoming unhealthy self-image. We were also interested in learning how social media affects the way we think of ourselves and others, and why we tend to compare ourselves to other people. We hoped to gain better understanding of ourselves and how to use that knowledge to support others.

1.2 Literature Review

One factor previously found to predict self-perception is masculinity. For example, in a correlational study survey by (Grosser et al, 2021), participants in a contest of creative skill (a gingerbread making competition) were asked to rate their gender on a two-point scale (0 = female, 1 = male) and to rate their creative self-perception using a thirty item adjective checklist. Respondents who rated themselves as masculine were also found to possess a higher level of creative self-perception. Based on these results, the researchers suggested that identifying as male significantly predicted more positive creative self-perception.

Another factor previously found to predict self-perception is quiescent silence. For example, in a correlational study survey by (Chou & Chang, 2021), participants were asked to rate, on a three item 7-point Likert scale, how likely they were to stay silent or withhold important information in a work environment to protect themselves from negative consequences: their quiescent silence. They were also asked questions to rate, on a seven item 7-point scale, their job self-efficacy: how well they saw themselves performing at their work. A higher level of quiescent silence in a work environment was found to correlate with lower job self-efficacy. Based on these results, the researchers suggested that increased quiescent silence significantly predicted lower job self-efficacy.

A third factor previously found to predict self-perception is social media. For example, a study conducted by de Vries and Kuhne (2015) examined the negative social perception that arises from social media use. Researchers asked participants to rate on a five-point scale (5 = totally agree) their agreement to the following two questions: 1. if they thought that others had better lives than them and 2. if they thought that others were doing better than they were. Researchers used another method using the five point scale to measure social competence and self appearance. The second set of questions asked participants 1. if they thought they had a lot of friends and 2. if they were satisfied with the way they look. To measure time spent on social media, researchers used a five-point scale asking the questions 1. I would be sorry if Facebook shut down and 2. Facebook has become part of my everyday activity. Participants rated the degree to which they agreed to the statements. The study found that the more time people spent on social media the more unhappy they became.

1.3 Hypotheses

Based on the above literature review, we predicted the following hypotheses:
Hypothesis #1: If masculinity increases then positive self-perception of creativity will increase.
Hypothesis #2: If quiescent silence increases then perceived self-efficacy will decrease.
Hypothesis #3: If time on social media increases then negative self-perception will increase.

2. Methods

2.1 Participants

The two authors of this paper served as the participants in its studies. The participants ranged in age from twenty-four years old, with an average age of twenty-eight years, and included one man and one woman. The participants were all undergraduate students at Camosun College who completed the current studies as an assignment for Psyc 110 (“Experimental Psychology”) and were grouped together

due to their mutual interest in self-perception.

2.2 Correlational Study Methods

We first performed a correlational study to test concurrently all of our hypotheses by examining naturalistic daily changes in their variables longitudinally. Each participant kept a study journal with them at all times over this study's one-week period in order to record self-observations of the following 6 variables: (1) quiescent silence, (2) masculinity (3) time spent on social media, (4) perceived self-efficacy, (5) positive self-perception of creativity, and (6) negative self-perception.

2.2.1 Quiescent silence

To measure quiescent silence, each participant recorded in their study journal the number of times on each day of the study that they engaged in quiescent silence. For these records, quiescent silence was defined as any opportunity a participant experienced to engage in conversation, where they chose not to engage out of fear of some negative consequence. Negative consequences were considered to be both external (e.g., fear of being judged negatively or receiving lower grades) and internal (e.g., embarrassment).

2.2.2 Masculinity

To measure masculinity, each participant rated themselves on a 5-point Likert scale on each day of the study. The possible values on this scale ranged from "I do not feel masculine" (a score of 1) to "I feel very strongly masculine" (a score of 5). Each participant referred to a shared list of 30 masculine traits as a reference for how masculinity was defined for the purposes of this study (see Appendix).

2.2.3 Time spent on social media

To measure time spent on social media, each participant recorded in their study journal how many minutes they engaged with social media on each day of the study. Social media was defined as any popular social networking site, including Facebook, Instagram, Snapchat and Tiktok.

2.2.4 Perceived self-efficacy

Perceived self-efficacy was measured using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) on each day of the study, responding to the statement "I am effective at accomplishing my goals".

2.2.5 Positive self-perception of creativity

To measure positive self-perception of creativity, each participant rated their creativity on a 5-point Likert scale on each day of the study. Possible responses ranged from "Not creative at all" (a score of 1) to "Extremely creative" (a score of 5).

2.2.6 Negative self-perception

To measure negative self perception, our group members used a five point-scale to measure how we were feeling about ourselves that day. Participants recorded their daily measurements from 0-4 for each day of the week. 0-extremely satisfied with how I feel about myself today 1-very satisfied with how I feel about myself today 2-satisfied with how I feel about myself today 3- somewhat satisfied with how I feel about myself today 4-not satisfied with how I feel about myself today.

2.3 Correlational Study Planned Analyses

To assess the strength and statistical significance of associations between variables predicted by our three hypotheses, we performed Pearson product moment correlations of their predictor variables (quiescent silence, masculinity, and time spent on social media) with their outcome variables (perceived self-efficacy, positive self-perception of creativity, and negative self-perception). For testing Hypothesis #1, we correlated total number of instances of quiescent silence for each participant with that participant's score for how effective

they felt at achieving their goals that day. For testing Hypothesis #2, we correlated each participant's self-reported feeling of masculinity with that participant's score for how creative they felt that day. For testing Hypothesis #3, we correlated the number of minutes each participant spent on social media that day with that participant's score for how they were feeling about themselves that day. We performed all of the above correlations separately for each participant as well as using data pooled across all of the participants. For the correlations using pooled data, in addition to using the raw data, we also performed correlations after we had first transformed the data from each participant into *z*-scores in order to standardize differences in averages and variability seen between the participants in their data and thus make them more comparable. A correlation coefficient was considered statistically significant if the probability of its random occurrence (*p*) was < .05 (i.e., less than 5% of the time expected by chance alone).

2.4 Experimental Study Methods

Based on the strength of the correlation between quiescent silence and perceived self-efficacy found in our correlational study, we then chose to conduct an experimental study to test for a causal relationship between these two variables from Hypothesis #1.

We manipulated the independent variable, quiescent silence, over a one-week period by assigning participants each day to either a quiescent silence condition or a natural voice condition using an alternating ABAB design. On experimental days, each participant performed five acts of quiescent silence, withholding a comment or remark in a situation where they would otherwise wish to voice an opinion. On control days, participants made no alteration to their daily routine. At the end of each day, each participant recorded their perceived self-efficacy by answering the question "How effective am I at achieving my goals?" on a 7-point scale, with 1 being not at all effective and 7 being highly effective. Each participant also got one associate to answer the same question each day (answering for their perception of the participant), without informing them whether the day was an experimental or control day, or what the expected outcome was.

Using an alternating ABAB design allowed us to minimize the impact of order effects on this study. Placebo and experimenter expectations could not be entirely controlled for, but collecting a second set of data from an associate of each participant who was not informed of which days were experimental or control days allowed for some unbiased measurements.

2.5 Experimental Study Planned Analyses

To assess the statistical significance of differences seen in quiescent silence on quiescent silence experimental days vs. natural voice control days, Student's *t*-tests were performed. We performed *t*-tests separately for each participant as well as using data pooled across all of the participants. For the *t*-tests using pooled data, in addition to using the raw data, we also performed *t*-tests after we had first transformed the data from each participant into *z*-scores in order to standardize differences in averages and variability seen between the participants in their data and thus make them more comparable. An average difference between conditions was considered statistically significant if, using a one-tailed distribution (i.e., to determine if there is a difference between groups in a specific direction), the probability of its random occurrence (*p*) was < .05 (i.e., less

than 5% of the time expected by chance alone).

3. Results

3.1 Correlational Study Results

After one week of data collection, none of the results of the correlational study yielded any significant correlation using pooled raw data or pooled standardized data, and only one participant yielded a statistically significant correlation (see Table 1). Quiescent silence and perceived self-efficacy were not significantly correlated for any single participant (r = .25 and r = .08, all $p \geq .603$), and using pooled raw data (r = .44, p = .122; see Figure 1) and pooled standardized data (r = .17, p = .576; see Figure 2) the variables were also not significantly correlated. Masculinity and positive self-perception of creativity were significantly correlated for one participant (r = .78, p = .038), but not for the other participant (r = -.59, p = .171), and using pooled raw data (r = .19, p = .525; see Figure 3) and pooled standardized data (r = .09, p = .76; see Figure 4) the variables were not significantly correlated. Time spent on social media and negative self-perception were not significantly correlated for any single participant (r = -.52 and r = .50, all $p \geq .249$), and using pooled raw data (r = .14, p = .63; see Figure 5) and pooled standardized data (r = -.01, p = .97; see Figure 6) the variables were also not significantly correlated. In total, the strongest correlation was found to be between quiescent silence and perceived self-efficacy, using the pooled standardized data (r = .17, p = .576; see Figure 2).

3.2 Experimental Study Results

In our self-rated results, there was no statistically significant correlation between silence and self-efficacy on either the experimental or control days. However, in the results our unbiased observers produced, there was a statistical significance, and self-efficacy was seen to be higher on days without quiescent silence, and lower on days with it. Our self-rated results using the pooled standardized data showed a p-value of .313 (see Table 2), but our other-rated results using the pooled standardized data showed a p-value of .049 (see Table 3).

4. Discussion

4.1 Summary of Results

Based on previous research, we hypothesized that increases in three variables would lead to three different effects on self-perception: increased instances of quiescent silence would correlate with decreased perceived self-efficacy (Hypothesis #1), increased masculinity would correlate with increased positive self-perception of creativity (Hypothesis #2), and increased time spent on social media would correlate with increased negative self-perception (Hypothesis #3). Data pooled across all participants in our correlational study did not support any of these hypotheses. However, the results of our experimental study indicated a casual relationship between quiescent silence and perceived self-efficacy when reported by external observers.

4.2 Relation of Results to Past Research

Our correlational study failed to confirm the relationship between quiescent silence and perceived self-efficacy reported by other researchers. Chou and Chang (2021) recorded a negative relationship between

quiescent silence and perceived self-efficacy: the more often an employee remained silent out of fear for negative consequences, the lower they reported their feelings of being effective in their position and their ability to achieve their goals. In contrast, our study demonstrated no significant correlation between silence and self-efficacy. Our study on quiescent silence and self-efficacy differed in scope, with far fewer data points than the Chou and Chang (2021) study. That study also focused specifically on job based self-efficacy, while our study was not restricted to a work environment. Further studies could restrict the scope of the environment in which data was collected and/or in which perceived self-efficacy was measured. It would also be important for further research to be conducted on a larger scale with more data points to ensure a greater diversity of participants.

When we tested this hypothesis experimentally, self-rated self-efficacy showed no casual relationship with quiescent silence, but there was a statistically significant difference in other-rated self-efficacy between quiescent silence and natural voice. While participants rated themselves similarly to their external observers on experimental days, external observers tended to rate participants as having higher self-efficacy on control days. One possible explanation for this might be that external observers were more objective judges of behaviour. We recommend that future studies attempt a longer study period with more time between experimental and control days, as the effect of lowering perceived self-efficacy through quiescent silence may persist in self-perception for longer than a single day.

Our correlational study on masculinity and self-perception of creativity only partially succeeded in reproducing the findings published by Grosser et al. (2021) and was not statistically significant in any of our pooled data. Grosser et al. (2021) found that participants tended to have a higher self-perception of their creativity when they identified as masculine. In our study, one of our participants demonstrated a statistically significant correlation between masculinity and positive self-perception of creativity. However, our other participant demonstrated the inverse correlation. Our study differed in terms of how we recorded masculinity: Grosser et al. (2021) sampled a large set of participants and asked them to identify themselves as masculine (male) or not (female) on a simple two-point scale. They then examined the results of self-perception over the two different groups of participants. In contrast, we asked each participant to record their self-perception of masculinity each day and did not use a binary scale. However, the participant who showed a positive correlation does identify as male, and the participant who showed an inverse correlation identifies as female, so further research could use a larger data set with more participants and record masculinity the way Grosser et al. (2021) did, or build upon both to explore the relationship between self-perception and both measures of masculinity. This would be an interesting study as it might further explore whether the relationship between masculinity and self-perception is dependent or independent of gender identity.

Our correlational study failed to confirm the relationship between social media use and self-perception reported by previous research. De Vries and Kuhne (2015) found that negative self-perception arises from extreme social media use. Specifically, they reported that the more time people spent on social media the more unhappy with themselves they became. In contrast, our participants did not find that their self-

perceptions, specifically how they feel about themselves, was related to the time they spent on social media per day. The methodology of our correlational study differed from that of the De Vries and Kuhne (2015) study. In their study, they measured a lot more people than in our study that only had 14 data points. They measured self-perception by asking participants to reflect on specific topics of how they look and if they thought they were popular, whereas we asked a more general question about how we felt that day. Future studies could consider a different way to measure self-perception by including a question that asked participants to reflect on themselves compared to other people. This modification would be interesting especially looking at how self-perception with a social comparison component might vary by age and perhaps gender. It might also be important for researchers to aim to include a larger sample of people and also ensure that people of different demographic groups are represented (e.g., ages, cultures, genders).

4.3 Implications of Results

Two particular points stand out from our research that could be the basis for future studies. While not the subject of experiment in this paper, closer analysis of the results of our hypothesis on the correlation between masculinity and positive self-perception of creativity demonstrated a statistically significant correlation with participant one, and a nearly statistically significant inverse correlation with participant two. However, since participant one identifies as male and participant two identifies as female, further research could be done on the relationship between masculinity and positive self-perception of creativity across male and female participants, the initial data suggests the possibility of a positive and negative correlation in males and females, respectively.

Secondly, the results of our experimental data showed a statistically significant effect of quiescent silence on perceived self-efficacy, but only based on measurements from external observers. Further research into what factors caused this might examine the ongoing effects of quiescent silence on self-perception. A practical effect of this finding might be the development of active speech and voicing feelings as a tool for improving self-efficacy and developing positive self-esteem.

We originally conducted these studies as a way to better understand self-image and to develop tools to help overcome unhealthy and inaccurate self-perception. Based on our results, one possible tool for accomplishing those goals could be a focus on reducing instances of quiescent silence, which further studies could develop further.

References

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De Vries, D. A., & Kühne, R. (2015). Facebook and self-perception: Individual susceptibility to negative social comparison on Facebook. *Personality and Individual Differences, 86*, 217-221. https://doi.org/10.1016/j.paid.2015.05.029

Grosser, T. J., Gilson, L. L., Dong, Y., & Madjar, N. (2021). Creative self-enhancement in a team context: the role of gender, creative self-concept, and trait hypercompetitiveness. *Psychology of Aesthetics, Creativity, and the Arts.* https://doi.org/10.1037/aca0000430

Table 1

Correlations for Study Variables

Variables	Participant #1		Participant #2		Pooled raw data		Pooled standardized data	
	r	*n*	*r*	*n*	*r*	*n*	*r*	*n*
Quiescent silence & Perceived self-efficacy	.25	7	.08	7	.44	14	.17	14
Masculinity & Positive self-perception of creativity	.78*	7	-.59	7	.19	14	.09	14
Time spent on social media & Negative self-perception	-.52	7	.50	7	.14	14	-.01	14

* $p < .05$.

Table 2

Descriptive Statistics for Self-Rated Self-Efficacy Across Different Quiescent Silence Conditions

Condition	Statistic	Participant #1	Participant #2	Pooled raw data	Pooled standardized data
Quiescent Silence	*M*	1.5	3.5	2.5	-0.12
	SD	1	1.29	1.51	.94
	n	4	4	8	8
Natural voice	*M*	2.33	3.33	2.83	.15
	SD	1.53	1.15	1.33	1.06
	n	3	3	6	6

Note. *M*, *SD*, and *n*, represent mean, standard deviation, and sample size, respectively. Quiescent silence rated on a scale of 1-7, from 1 = not at all effective to 7 = extremely effective.

* $p < .05$ for comparison of quiescent silence condition with its respective natural voice condition.

Table 3

Descriptive Statistics for Other-Rated Self-Efficacy Across Different Quiescent Silence Conditions

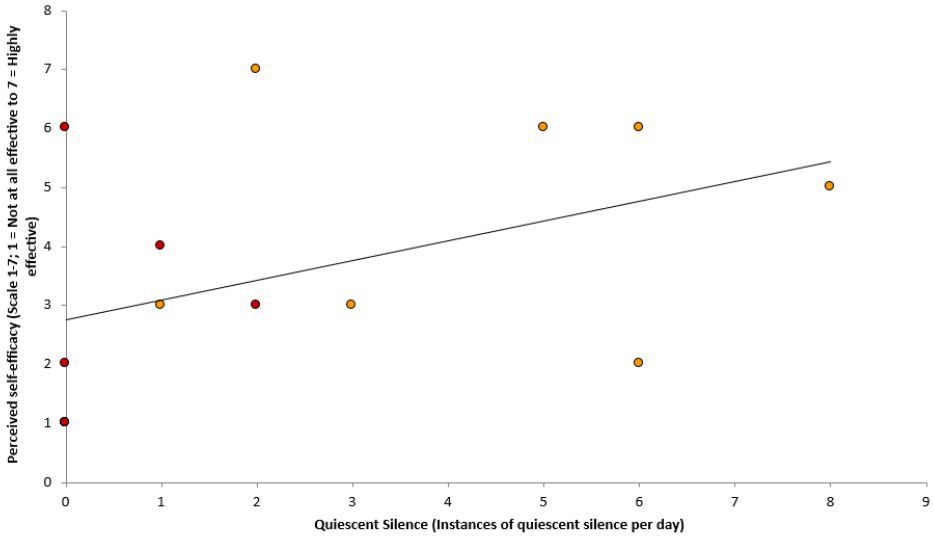
Condition	Statistic	Participant #1	Participant #2	Pooled raw data	Pooled standardized data
Quiescent Silence	*M*	1.5 3.25	3.25*	2.38	-.35*
	SD	1	1.26	1.41	1.04
	n	4	4	8	8
Natural voice	*M*	1.67	5.33*	3.5	.47*
	SD	.58	.58	2.07	.65
	n	3	3	6	6

Note. *M*, *SD*, and *n*, represent mean, standard deviation, and sample size, respectively. Quiescent silence rated on a scale of 1-7, from 1 = not at all effective to 7 = extremely effective.

* $p < .05$ for comparison of quiescent silence condition with its respective natural voice condition.

Figure 1

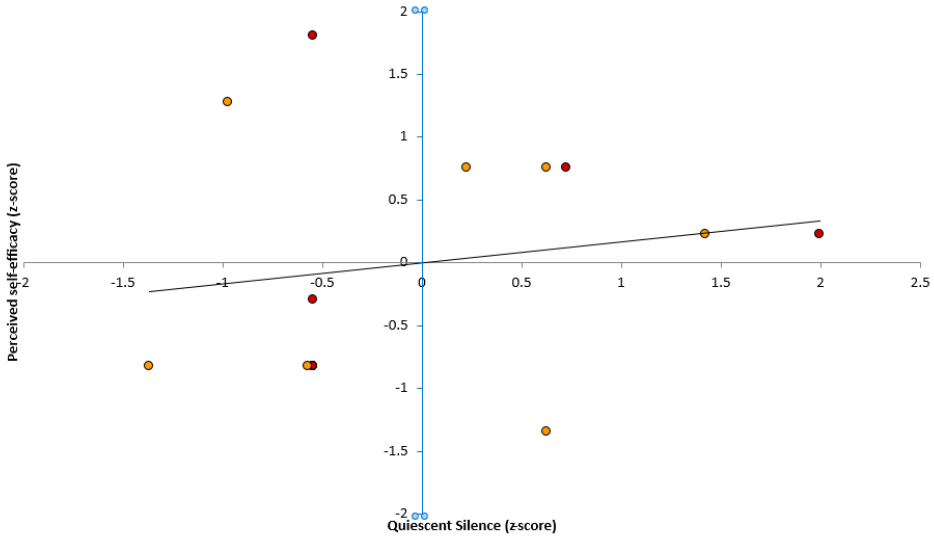
Association between Quiescent silence and Perceived self-efficacy Using Pooled Raw Data



Notes. Marker colour differentiates participants: red = participant #1 and orange = participant #2. Some data might not be visible in the figure due to overlapping markers.

Figure 2

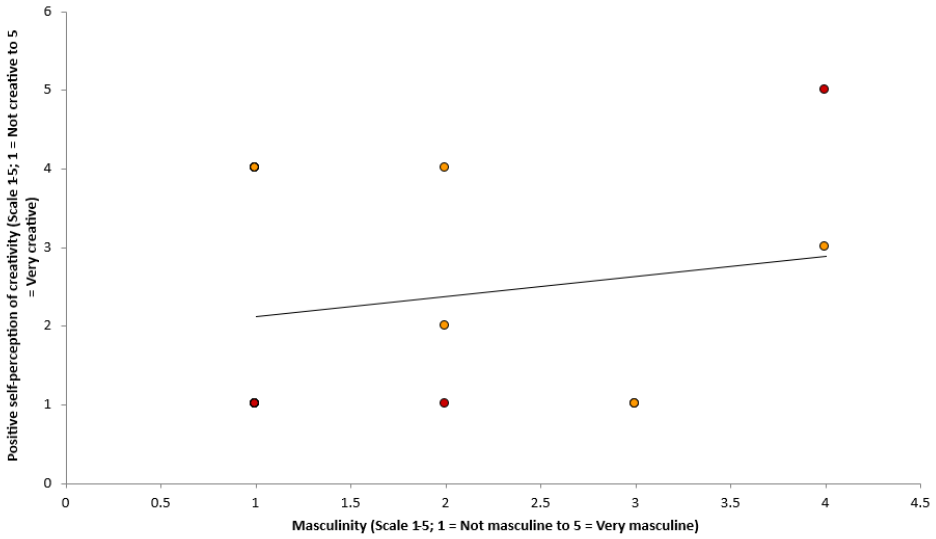
Association Between Quiescent silence and Perceived self-efficacy Using Pooled Standardized Data



Notes. Marker colour differentiates participants: red = participant #1 and orange = participant #2. Some data might not be visible in the figure due to overlapping markers.

Figure 3

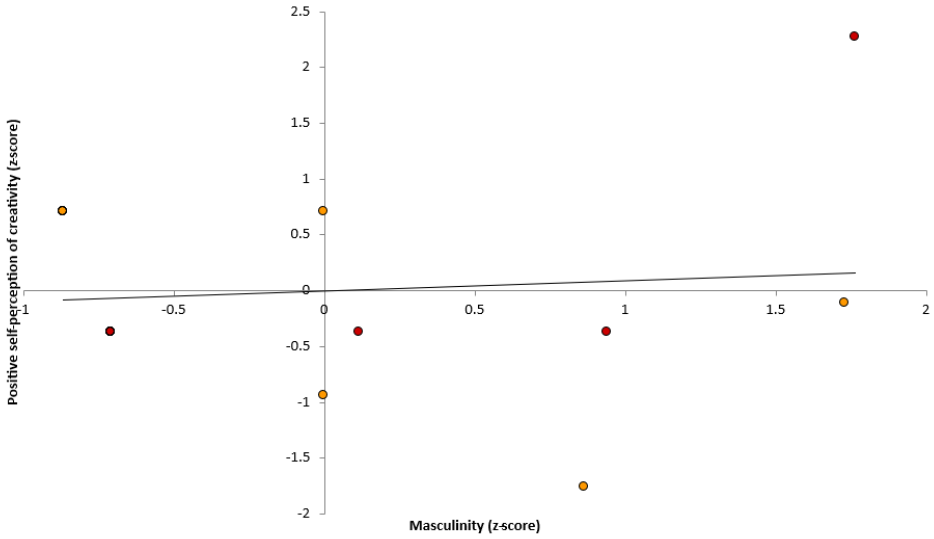
Association Between Masculinity and Positive self-perception of creativity Using Pooled Raw Data



Notes. Marker colour differentiates participants: red = participant #1 and orange = participant #2. Some data might not be visible in the figure due to overlapping markers.

Figure 4

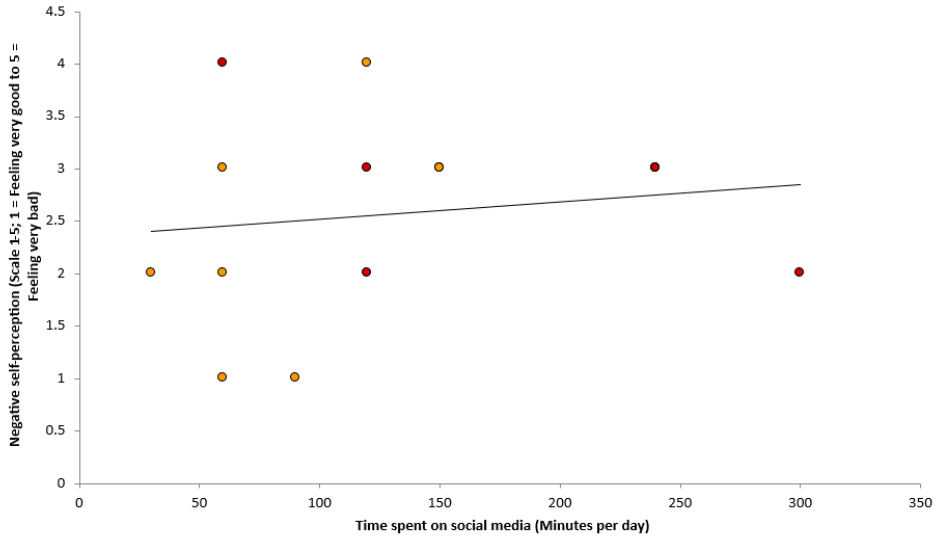
Association Between Masculinity and Positive self-perception of creativity Using Pooled Standardized Data



Notes. Marker colour differentiates participants: red = participant #1 and orange = participant #2. Some data might not be visible in the figure due to overlapping markers.

Figure 5

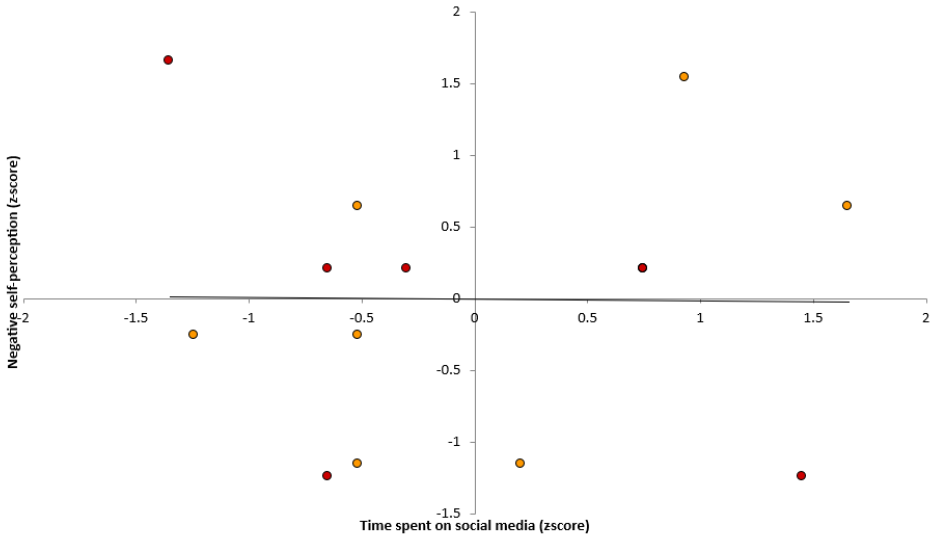
Association between Time spent on social media and Negative self-perception Using Pooled Raw Data



Notes. Marker colour differentiates participants: red = participant #1 and orange = participant #2. Some data might not be visible in the figure due to overlapping markers.

Figure 6

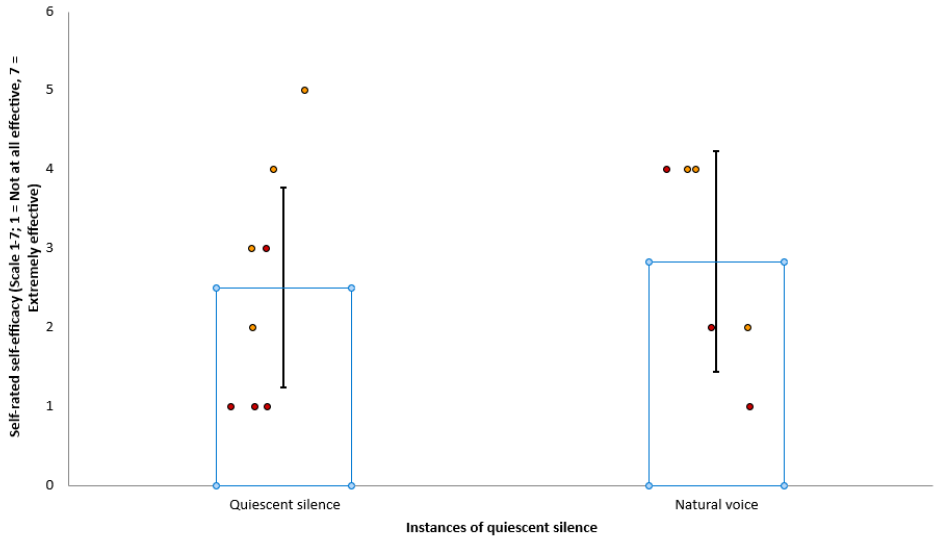
Association between Time spent on social media and Negative self-perception Using Pooled Standardized Data



Notes. Marker colour differentiates participants: red = participant #1 and orange = participant #2. Some data might not be visible in the figure due to overlapping markers.

Figure 7

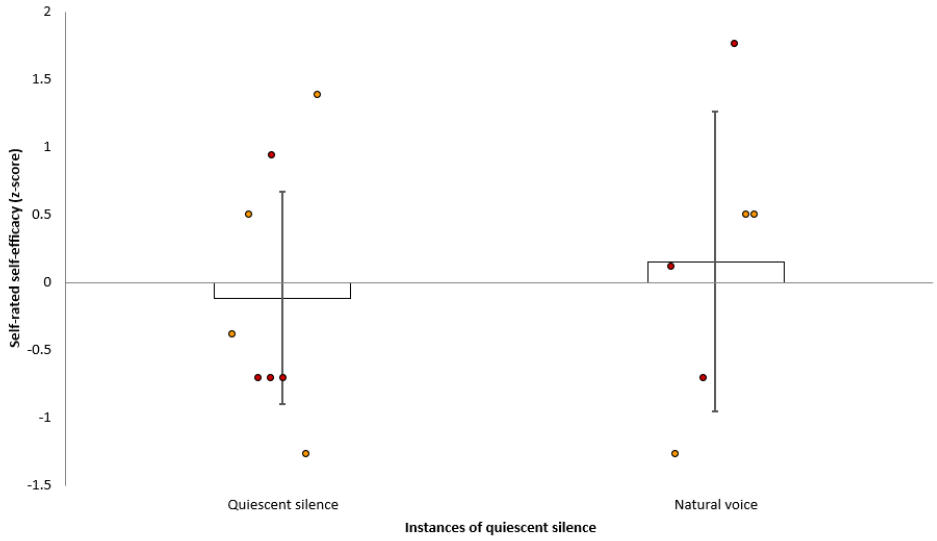
Average Self-Rated Self-Efficacy Across Different Quiescent Silence Conditions Using Pooled Raw Data



Notes. Self-rated self-efficacy scores are shown for quiescent silence and natural voice conditions using pooled raw data from all participants. Errors bars show ± 95% confidence levels. Overlapping scatterplot shows data from each participant. Marker colour differentiates participants: red = participant #1, orange = participant #2, and yellow = participant #3.

Figure 8

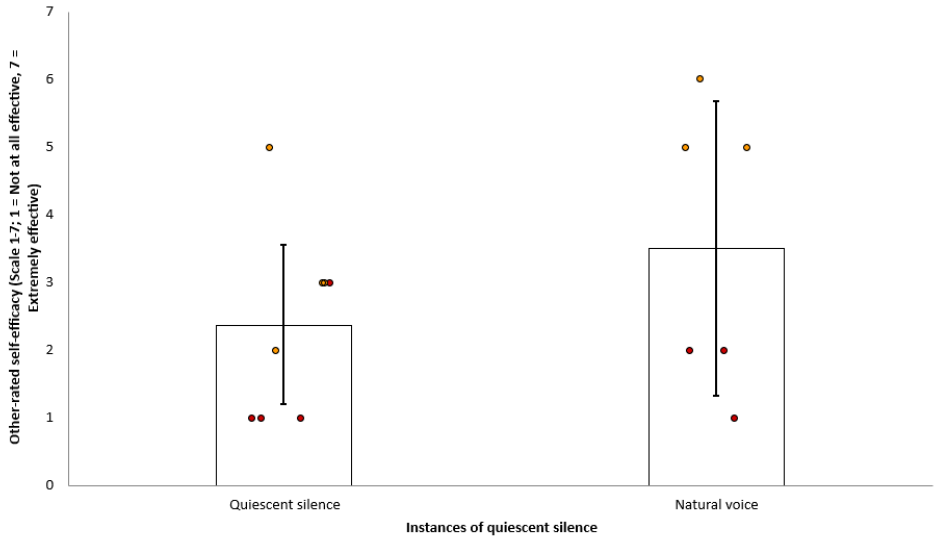
Average Self-Rated Self-Efficacy Across Different Quiescent Silence Conditions Using Pooled Standardized Data



Notes. Self-rated self-efficacy scores are shown for quiescent silence and natural voice conditions using pooled raw data from all participants. Errors bars show ± 95% confidence levels. Overlapping scatterplot shows data from each participant. Marker colour differentiates participants: red = participant #1, orange = participant #2, and yellow = participant #3.

Figure 9

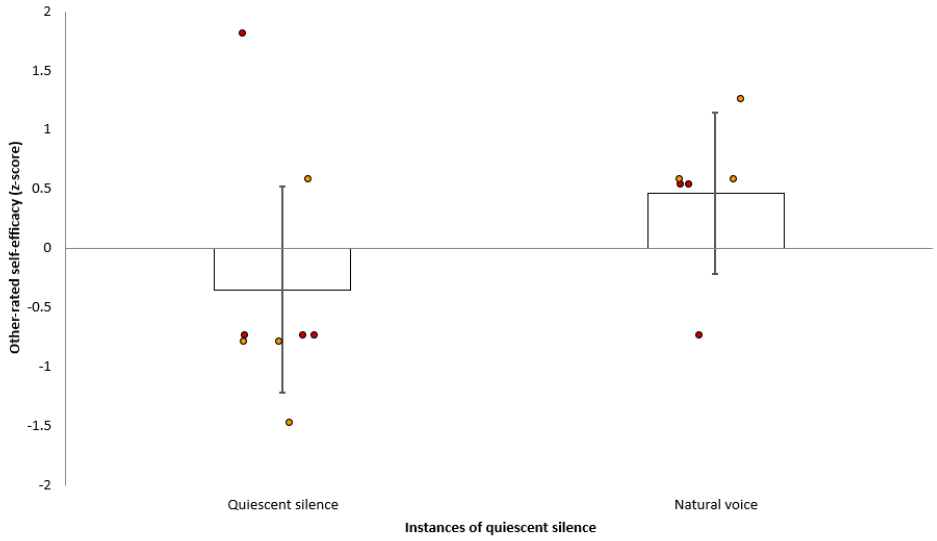
Average Other-Rated Self-Efficacy Across Different Quiescent Silence Conditions Using Pooled Standardized Data



Notes. Other-rated self-efficacy scores are shown for quiescent silence and natural voice conditions using pooled raw data from all participants. Errors bars show ± 95% confidence levels. Overlapping scatterplot shows data from each participant. Marker colour differentiates participants: red = participant #1, orange = participant #2, and yellow = participant #3.

Figure 10

Average Other-Rated Self-Efficacy Across Different Quiescent Silence Conditions Using Pooled Standardized Data



Notes. Other-rated self-efficacy scores are shown for quiescent silence and natural voice conditions using pooled raw data from all participants. Errors bars show ± 95% confidence levels. Overlapping scatterplot shows data from each participant. Marker colour differentiates participants: red = participant #1, orange = participant #2, and yellow = participant #3.

Appendix

List of 30 Masculine Traits Used as a Reference for How Masculinity Was Defined for the Purposes of This Study

	Masculine		Feminine	
	(-) Vices	(+) Strengths	(+) Virtues	(-) Weaknesses
	Aggressive	*Authoritative*	*Tactful*	*Shy/ Timid*
	Boastful	*Certain*	*OK with the Unknown*	*Spacey/ Flakey*
	Dominant	*Debonaire*	*Sensitive*	*Drama-Queen*
	Vain	*Self-assured*	*Humble*	*Insecure*
	Brazen	*Courageous*	*Thoughtful*	*Gossiping*
	Egotistical	*Goal Oriented*	*Compassionate*	*Hysterical*
	Violent	*Protective*	*Social*	*Passive*
	Act without Thinking	*Physical*	*Sympathetic*	*Think without Acting*
	Clumsy	*Black/ White*	*Graceful*	*Fragile*
	Overly Logical	*Easy Going*	*Outgoing*	*Illogical*
	Indifferent	*Ambitious*	*Attentive*	*Nosy*
	Combative	*Funny*	*Caring*	*Obsessive*
	Defiant	*Active*	*Empathetic*	*Frightened*
	Argumentative	*Action Oriented*	*Careful*	*Indecisive*
	Compulsive	*Spatial Reasoning*	*Verbally Skilled*	*Complaining*
Men:	Negative	Positive	Neutral	Negative (x3)
Women:	Negative (x3)	Neutral	Positive	Negative